



Department of Energy  
Washington, DC 20585

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Mr. Joseph F. Nemec  
[ ]  
Bechtel Jacobs Company, LLC  
P.O. Box 4699  
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Subject: Bechtel Jacobs Company, LLC Price-Anderson Amendments Act Program  
Review

Dear Mr. Nemec:

On July 25 and 26, 2001, the Department of Energy (DOE), Office of Price-Anderson Enforcement (OE), conducted a review of the Price-Anderson Amendments Act (PAAA) Program implemented by the Bechtel Jacobs Company, LLC (BJC) for its activities at DOE's Oak Ridge, Paducah, and Portsmouth facilities. As part of this review, BJC processes for screening nuclear safety noncompliances for applicability under the PAAA, for reporting to DOE's Noncompliance Tracking System (NTS), and for internal resolution of nuclear safety noncompliances were evaluated. This review included onsite discussions with cognizant personnel and a review of applicable documentation prior to and subsequent to the onsite visit. Details of the OE review are enclosed.

Our review noted several positive elements of your PAAA program. In particular we found the following:

- Your PAAA Coordinator is knowledgeable and experienced.
- The PAAA noncompliance determination and reporting process is structured and is described in a formal procedure.
- The PAAA Coordinator uses various information sources for screening of possible nuclear safety noncompliances including reviews of internal program assessments.
- In general, appropriate screening decisions were made regarding noncompliance reportability for event or assessment-identified noncompliances.
- Cause determinations were made for PAAA noncompliances tracked internally or in the NTS.

- The PAAA Coordinator conducted a self-assessment of the PAAA program in June 2000 and underwent a PAAA Peer Review Independent Assessment in May 2001.
- BJC developed a Corrective Action Plan to address the weaknesses identified in the PAAA Peer Review Independent Assessment.

The review also identified the following PAAA program deficiencies:

- Not all sources of PAAA noncompliances are reviewed for PAAA applicability.
- The review noted a significant lack of timeliness in evaluating, reporting and developing corrective actions for PAAA noncompliances.
- The review noted a general weakness in the process of reviewing for noncompliances of a programmatic or repetitive nature.
- Terminology in the *Price Anderson Amendments Act (PAAA) Noncompliance Determination and Reporting* procedure and criteria used by the Senior Review Board in evaluating issues for PAAA applicability might incorrectly impact compliance or reportability determinations. OE identified other weaknesses with this procedure, which are discussed in the attached report.

Our review noted that many of these program deficiencies had been identified to BJC by the PAAA Peer Review Independent Assessment and are being addressed. However, failure to adequately correct these deficiencies may result in a reduction or loss of mitigation as described in the DOE Enforcement Policy (10 CFR 820 Appendix A) in any future enforcement action. The specifics of DOE's observations are documented in the enclosed report.

OE is currently involved in the development of an Enforcement Guidance Supplement (EGS) to outline our enforcement position relative to implementation of the Independent and Management Assessment requirements of 10 CFR 830.122. Towards that end, our onsite visit also included a review of the implementation of your Independent and Management Assessment Programs. Information obtained during our review will prove valuable in our development of the EGS; a summary of our review in this area is enclosed.

No reply to this letter is required. If you have any questions, please contact Sharon Hurley (301) 903-0110.

Sincerely,



R. Keith Christopher  
Director  
Office of Price-Anderson Enforcement

Enclosures: PAAA Program Review  
Independent and Management Assessment Review

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**Bechtel Jacobs Company, LLC**  
**Price-Anderson Amendments Act Program Review**

**I. Introduction**

On July 25 and 26, 2001, the Department of Energy (DOE), Office of Price-Anderson Enforcement (OE), conducted a review of the Price-Anderson Amendments Act (PAAA) Program implemented by the Bechtel Jacobs Company LLC (BJC) for its activities at DOE's Oak Ridge, Paducah, and Portsmouth facilities. The review evaluated the program's functions related to the following: the identification and screening of nuclear safety noncompliances, the determinations of reportability to DOE's Noncompliance Tracking System (NTS), cause determination for noncompliances reported either to the NTS or BJC's onsite tracking system, and noncompliance corrective action implementation and closure.

**II. PAAA Program Implementation**

- A. The BJC PAAA program infrastructure and personnel responsibilities are described in the following BJC documents:
  - 1. BJC procedure PQ-A-1610, Revision 1, effective March 17, 2000, titled *Price Anderson Amendments Act (PAAA) Noncompliance Determination and Reporting*,
  - 2. BJC Policy 103, Revision 0, *Price-Anderson Amendments Act Program*, approved February 16, 1999, and
  - 3. The Charter for the BJC PAAA Senior Review Board.
- B. Procedure PQ-A-1610 "applies to all Bechtel Jacobs employees and operations associated with nuclear or radiological facilities" and "activities and systems whose failure could cause or worsen nuclear accidents, or could result in the potential for radiological harm." The procedure establishes responsibilities for personnel who may identify potential PAAA noncompliance events or conditions. This procedure provides that—
  - 1. BJC employees are to report potential nuclear or radiological safety events/ deficiencies/concerns arising from self-performed work to supervisors.

2. Subcontract Technical Representatives (STR) are to report potential nuclear or radiological safety events/deficiencies arising from work performed by subcontractors to the responsible project manager.
  3. Auditors are to report an issue raised during an audit to the responsible project/functional manager or supervisor.
  4. Project/functional managers and supervisors are to refer potential nuclear or radiological issues to the BJC Coordinator for further review.
- C. A Senior Review Board (SRB) reviews noncompliances and makes final determinations of PAAA applicability and NTS reportability. The SRB is comprised of the BJC PAAA Coordinator, representatives from at least three projects having nuclear facilities, and the functional managers for ES&H, QA, Legal, and Engineering. The PAAA Coordinator has responsibility for overall administration and coordination of the PAAA program, including convening and chairing SRB meetings.
- D. The BJC PAAA Program underwent a self-assessment in June 2000 and a PAAA Peer Review Independent Assessment in May 2001. The PAAA Peer Review Independent Assessment identified numerous weaknesses which are being addressed in a formal corrective action plan.
- E. The OE review identified the following positive aspects of the BJC PAAA Program implementation, specifically:
1. The BJC PAAA Coordinator is knowledgeable and experienced.
  2. The PAAA noncompliance determination and reporting process is structured and is described in a formal procedure.
  3. The PAAA Coordinator conducted a self-assessment of the PAAA program in 2000 and in 2001 BJC initiated a Peer Review of the PAAA program.
  4. BJC developed a corrective action plan to address the weaknesses identified in the Peer Review.
- F. The OE review found that BJC did have certain weaknesses in its PAAA Program implementation, namely:
1. BJC procedure PQ-A-1610 lacks detail regarding how, when, and by whom trending for repetitive and programmatic issues was to be performed.
  2. BJC procedure PQ-A-1610 lacks guidance for achieving prompt identification of PAAA noncompliances.

3. The 2000 self-assessment missed an opportunity to identify some of the weaknesses disclosed by the 2001 Peer Review and the OE review.

### **III. Noncompliance Identification and Screening**

BJC procedure PQ-A-1610 requires the PAAA Coordinator to review the following: (a) potential noncompliances forwarded by project/functional organizations, (b) issues identified from the Issue and Corrective Action Tracking System (ICATS) and other sources. If the review indicates that an issue is a potential PAAA noncompliance, then the Coordinator submits the issue to the SRB for further consideration.

A. OE's review of the identification and screening processes identified the following positive elements:

1. Review of the information from the contractor reflected that a variety of information sources are routinely evaluated, including ORPS reports, ICATS, self assessment reports, and independent assessment reports.
2. OE's review of selected recent events and assessment findings indicate that in general the SRB is making appropriate determinations regarding PAAA applicability.

B. OE found a number of weaknesses in BJC's PAAA noncompliance identification processes. Namely, although BJC procedure PQ-A-1610 clearly requires project/functional managers and supervisors to refer potential nuclear or radiological issues to the BJC PAAA Coordinator for further review, OE found that in practice these referrals were not always being made. As a result, the BJC PAAA Coordinator is limited to a review of management reporting systems and assessment reports to which he has access for sources of referrals to the SRB.

1. For example, BJC maintains an Anomalous Conditions Incident Report (ACIR) database for nuclear [ ] safety incidents. The ACIR captures information, which may include sources of PAAA noncompliances. However, ACIR reports are not provided to the PAAA Coordinator or to the SRB, nor has the functional manager for [Nuclear] Safety referred a potential PAAA issue directly to the BJC PAAA Coordinator.
2. Additionally, BJC procedure PQ-A-1610 requires that STRs are to report potential nuclear or radiological safety events/deficiencies arising from work performed by subcontractors to the responsible project manager. The project manager is to refer these issues to the BJC PAAA Coordinator. The self-assessment performed in June 2000 found that "very few issues" are forwarded from the STRs.
3. As part of this review, OE interviewed the project manager and the quality manager for a subcontractor performing D&D and construction work at the

ETTP. The subcontractor project manager and the quality manager demonstrated general knowledge of PAAA nuclear safety rules and were knowledgeable that potential PAAA noncompliances are to be reported to the STR. They stated they were aware of one PAAA potential nonconformance occurring in October 2000 that was referred to the STR and provided supporting documentation to OE. However, documentation provided by BJC indicated that noncompliance did not come to the attention of the BJC PAAA Coordinator and was not screened for PAAA applicability.

C. The review also found several problems with language in the PAAA screening and reporting procedures BJC-1610 related to determination of a noncompliance in the Attachment B evaluation guide, including the following:

1. Steps 1 and 2 of the evaluation guide indicate that an issue would have to involve radioactive or [nuclear] material or involve something addressed in the authorization (SAR, TSR, OSR, etc.) in order to be a PAAA noncompliance. No such threshold is provided in the rules for applicability of particular rule requirements.
2. Step 3 indicates that an issue must affect one of the occurrence condition categories (fire, explosion, safety status degradation, [nuclear] safety, personnel exposure or contamination, etc.) in order to be a PAAA noncompliance. These categories pertain to NTS reportability for such conditions classified as Unusual.
3. Step 8 states that failure to follow procedures is a PAAA noncompliance if the procedures are nuclear or radiological safety instructions. This is much narrower than the Part 830 requirements for work controls.
4. Similarly each of the steps 3 through 12 appear to provide a more narrow definition of the scope of the nuclear safety rules than is stated in the rules.

D. Other weaknesses included the following:

1. OE found a significant weakness with the timeliness of noncompliance identification and screening. OE identified several instances in which a noncompliance determination was not made for four months or more from the date of an occurrence.
2. OE found that BJC might be applying criteria in the identification and screening process that could result in PAAA noncompliances being inappropriately screened out. For example, in one case a vendor supplied defective Personnel Protective Equipment to BJC. The SRB reviewed the occurrence and judged it not to be a PAAA issue for BJC. In reaching this decision, documentation from BJC indicates that the board considered that the defects were identified prior to donning and that no contamination resulted from the

defective items. While there were no actual consequences, OE is concerned that additional review is necessary to reach a conclusion that the occurrence has no PAAA applicability.

3. BJC's procedure for control of nonconforming items and services (BJC-PQ-1440) "does not apply where deficiencies can be corrected at the time they are discovered, minor deficiencies (e.g., missing piece of documentation) can be resolved through direct communication, or where the implementing organization has a documented process which describes identification, control, disposition, and reporting of nonconforming items." Consequently, PAAA noncompliances that meet these criteria might not come to the attention of the BJC PAAA Coordinator for a screening.

#### **IV. Evaluation of NTS Reportability**

The SRB conducts a review to confirm PAAA noncompliance. For those issues confirmed to have PAAA applicability, the SRB determines how the issues will be reported (i.e., into the internal tracking system as non-NTS reportable noncompliances or into the NTS as NTS-reportable noncompliances). Non-NTS reportable noncompliances are tracked in the ICATS, a database maintained by the contractor.

- A. The review found several problems with language in the PAAA screening and reporting procedures BJC-1610 related to determination of reportability for a noncompliance, including:
  1. Section C has steps that imply a determination of safety significant for reportability, namely (step 5) indicates an issue is NTS-reportable if it is potentially significant, and step 10 indicates that low or minimal safety significance items are below the NTS reporting threshold. DOE's reporting guidance has no such significance determination required once the reporting threshold in the guidance is reached.
  2. The Attachment B evaluation guide only picks-up [nuclear safety] and authorization basis Unusual conditions and certain radiation exposure and personnel contamination incidents as being NTS reportable, besides the management and programmatic issues. It does not include the other "unusual occurrence" conditions in DOE's NTS reporting threshold guidelines.

Despite the above noted procedural problems, OE found that in general the SRB was making appropriate determinations regarding NTS reportability. However, once the SRB determined that an issue was NTS-reportable, OE found significant delays in reporting the issue into the NTS. In some cases, OE found delays of 40 days or more before BJC generated the NTS report.



Additionally, there was a lack of evidence/documentation that reviews for potential repetitiveness, programmatic or common problems were being performed. In one case, OE noted indicators of repetitive or programmatic work control deficiencies (i.e., numerous Nonconformance Reports over a two-month period). The SRB elected to track these issues through BJC's internal tracking system rather than to report a repetitive or programmatic issue into the NTS.

## **V. Issues Management System**

BJC has developed and implemented a comprehensive issues management program as documented in Procedure BJC-PQ-1210. Roles and responsibilities of the program are defined for the submittal, cause analysis, and corrective action of issues by project/functional organizations, as well as issue entry, tracking, and corrective action verification by the P/QA organization.

The BJC program also includes a centralized management database, the Issues/Corrective Action Tracking System (ICATS). Issues requiring processing in ICATS come from a broad range of sources. Both NTS and internally reportable PAAA noncompliances are entered into and tracked in ICATS. Other sources of ICATS issues include ORPS, internal and external performance assessments, surveillances, NCRs, employee concerns, and oversight activities of subcontractors.

A. The following positive observations were noted concerning the BJC issues management system:

1. The broad sources and diverse scope of issues in ICATS makes it a suitable tool for use in identifying PAAA non-compliance.
2. The use of a single issues management system is conducive to performance trending and the identification and correction of repetitive or programmatic issues.

B. The following areas needing improvement were also noted:

1. Roles, responsibilities, and processes for the periodic trending and identification of repetitive or programmatic issues have not been established. Such weaknesses go beyond the non-mandatory PAAA reporting process and could be viewed as a potential non-compliance with Part 830.122 quality improvement requirements.
2. The use of ICATS as a trending tool has not been fully developed or implemented.

## VI. Root Cause Analysis and Corrective Actions

Cause determinations are completed for both internally tracked and NTS reportable PAAA noncompliances. PAAA noncompliances that are NTS or ORPS reportable or meet other significance criteria receive formal root cause investigations. The process for conducting formal root cause investigations has been proceduralized including requirements for investigator training, guidance on choosing a root cause method, and the development and implementation of corrective actions.

Corrective actions for both internal and NTS reportable are tracked in ICATS (see the previous report section). The P/QA group independently reviews corrective action responses. The P/QA group also verifies the implementation, completion and effectiveness of corrective actions.

- A. In general, a review of completed root cause determinations and corrective actions did not identify any significant deficiencies. The following positive attributes were observed.
  - 1. Cause determinations are done for both internally and NTS reportable noncompliances
  - 2. Senior management and the PAAA coordinator routinely monitor the status of corrective actions
- B. The following areas needing improvement were also noted.
  - 1. The BJC root cause process lacks guidance on when a root cause team should be used versus the project/functional manager for non-compliance analysis (i.e. issue complexity, safety significance, programmatic or repetitive occurrences).
  - 2. Some repetitive or similar type PAAA noncompliances that span a long time period (one to two years) were added to a previously opened NTS report. In reviewing these NTS reports, it appears BJC analysis of the subsequent events did not always address the effectiveness of the initial corrective actions (NTS-ORO--BJC-BJCPM-2000-0001 and NTS-ORO--BJC-PGDPENVRES-1999-0002).
  - 3. On average, BJC timeliness for the prompt identification of corrective actions for those issues determined to be NTS reportable does not meet the OE's established guidance for potential enforcement mitigation.

## VII. Conclusion

The DOE Enforcement Policy (10 CFR 820, Appendix A) provides positive incentives for contractors who identify, report, and promptly and comprehensively

correct nuclear safety noncompliances. However, some of the noted deficiencies, if not corrected, have the potential to impact application of enforcement discretion in any future enforcement action.

**Office of Price-Anderson Enforcement  
Independent and Management Assessment Review  
Bechtel Jacobs Company, LLC**

**I. Introduction**

During the period June 15-August 15, 2001, including a site visit on July 25-26, 2001, the DOE Office of Price-Anderson Enforcement (OE) reviewed elements of the Bechtel Jacobs Company, LLC (BJC) Independent and Management Assessment Program. This pilot review was performed to collect information for an Enforcement Guidance Supplement (EGS) that is currently being developed by OE. Once completed, the EGS will outline the OE enforcement position relative to the Independent and Management Assessment requirements of 10 CFR 830.122, and will serve as a guide for future OE formal reviews of these areas. Despite the pilot nature of the review, OE did identify areas of positive performance that are described below. The OE review also identified several deficient areas that, subsequent to the formal promulgation of the EGS, may reflect potential noncompliance with 10 CFR 830.122 requirements. These are also summarized below.

**II. Overview**

**A. Independent Assessment**

The BJC Independent Assessment Program is implemented through the Program Assessments group in the Performance Quality Assurance organization. The Performance Quality Assurance organization reports directly to the President of BJC. The Program Assessments group administers on the order of 55 to 60 independent assessments per year. The program is controlled by procedure PQ-A-1401, *Independent Assessments*. Independent Assessments are primarily conducted by a subcontractor to BJC, with some teams using ES&H organization personnel for a particular expertise and who are independent of the activities being assessed. A corporate commitment has been made to conduct 2 Independent Assessments of each functional area or project per year.

Since subcontractors to BJC are conducting most project and functional work, requirements for management and independent assessments are placed in subcontracts as appropriate. Larger subcontracts have requirements for conducting Independent Assessments.

## B. Management Assessment

The BJC procedure PQ-A-1420, *Management Assessment* establishes responsibilities and a framework for the management assessment program in BJC activities. Each functional area and project have responsibility for implementing a management assessment activity, and requirements are placed in subcontracts for these organizations to similarly implement a management assessment function. Overall administrative oversight of the program rests in the Program Assessments group in the Performance Quality Assurance organization.

Management Assessments are primarily being led by managers. Although some may be team reviews, a large percentage of these appear to be individual efforts. The volume of management assessments across projects and functional areas for BJC is quite large, with on the order of 1,000 being conducted per year.

## C. Corrective Action Process

BJC has implemented a single process to capture quality, safety and other deficiencies and problems. The process is the ICATS (Issues/Corrective Action Tracking System). The Issues Management organization is responsible for entering issues identified in Independent and Management Assessments into the ICATS system to manage resolution of the problems found. The process is governed by BJC procedure BJC-PQ-1210, *Issues Management Process*.

## III. Results

The OE review identified various observations (both positive and negative) that are considered highly relevant to the development of the EGS criteria. The following program strengths and/or positive initiatives were noted during the subject review.

- A. The following strengths in compliance-related issues were noted during the current review:
  1. The Independent Assessment process was noted as a strength. Roles and responsibilities are well established in by administrative procedure; Independent Assessments were comprehensive, identified significant findings, and appeared to be effective in uncovering systemic or programmatic weaknesses. Independent Assessment leaders are qualified lead auditors. Functional areas and projects are receiving a routine level of Independent Assessment oversight. The organization responsible for the Independent Assessment function within BJC is sufficiently independent to objectively conduct this activity.
  2. Several strengths were also noted in the Management Assessment area. An extensive number of Management Assessments are being conducted, and these appear to be effective in finding a significant level of deficiencies in the

various activities and areas assessed. Management Assessments are being conducted or led by managers.

3. Although a general weakness is noted below in the lack of crosscutting reviews to identify programmatic issues, one area of strength was noted in the Waste Operations area where management is using results from Management Assessments and other sources to rate subcontractor performance in various functional and technical areas. A poor rating could be indicative of areas of weakness or programmatic problems. Although not the complete answer to this problem, it is a step in the right direction.
  4. Another notable strength is that BJC incorporates a single quality problem resolution process, namely the ICATS process (as also noted in the foregoing PAAA Program Review Report). Also, corrective actions for findings from assessments appear to be completed in a timely manner. For the sample of assessments reviewed it was found that completion time (from the date of the assessment report to the completion of a corrective action) ran about 5 months on average.
- B. The following areas of deficient implementation were also noted during the current review. Subsequent to issuance of the EGS and more formal OE reviews of this area, several of the following deficiencies would be considered potential noncompliances of 10 CFR 830.122 requirements.
1. Certain procedural requirements (from PQ-A-1420, *Management Assessment*) were not being met. Specifically, requirements for each project and functional area to prepare an Annual Management Assessment Report compilation and review of the Management Assessment results for their organization was not being done by all areas or projects.
  2. In general, the Independent Assessment teams appeared to be well qualified, with appropriate expertise for the areas they assessed. This was based on a review of a small number of Independent Assessments. One exception was noted concerning an Independent Assessment of the "RadCon Subcontract" (report of April 18, 2000). That team was composed of individuals with strong assessment, quality assurance, and worker safety expertise. Although the team did a commendable job of uncovering some significant weaknesses and numerous findings in the implementation of the radiological control requirements, the team lacked a member with radiological controls or health physics expertise.
  3. Although assessment findings are generally placed into the ICATS process, several other quality problems and deficiencies, which may not be findings (i.e., a nonconformance with some requirement), are not routinely placed in ICATS.

4. Crosscutting reviews of the discrete deficiencies from Management Assessments are not being effectively conducted to identify programmatic or systemic issues (as also noted in the foregoing PAAA Program Review Report). Annual Management Assessment Reports potentially could accomplish this; however the few that had been conducted were a summary of results without an analysis to identify such broader problems. The monthly Management Assessment reports, while providing a valuable tool from a management and statistical standpoint, do not appear to serve the purpose of identifying programmatic problems.
5. Effectiveness reviews are not being conducted of the Independent and Management Assessment processes, such as when a significant event occurs disclosing a programmatic problem or when an external party identifies a systemic issue. The standard should be that these processes are effective in uncovering such programmatic weaknesses.
6. Other weaknesses, although not strictly potential compliance issues, were noted in the following: (1) the Independent Assessment teams are not used to review and comment on root cause analyses and proposed corrective actions for findings they have identified; and (2) Management Assessments varied across different projects and functional areas in their level of depth and documentation, although it is noted that BJC had similarly noted the problem and was intending to correct this in an upcoming revision to the governing procedure.

The above items are provided for appropriate consideration by BJC. No response to OE is required for this pilot review report.